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Evaluating WMD Proliferation Risks at the Nexus of Manufacturing Tools and Methods Used in DIY Communities

Center on Contemporary Conflict

Monterey, California: Naval Postgraduate School

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Research in Progress describes ongoing PASCC research. For more information, please contact pascc@nps.edu.

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Project Cost: $102,253
FY16–17

Objective:

This project will investigate how access to additive and subtractive manufacturing tools by do-it-yourself (DIY) communities decreases barriers for producing items on the Nuclear Suppliers Group (NSG)'s list of technologies controlled for export in order to determine if new manufacturing tools embraced by DIY communities may cause new proliferation risks. U.S. nonproliferation policy has principally relied on the notion that limiting access to nuclear technology can contain the proliferation of nuclear weapons and materials through export controls. Recently, however, additive and subtractive computer-aided manufacturing tools have become more widely accessible to DIY communities of entrepreneurs and hobbyists—a development that could increase the number of companies and individuals capable of fabricating export-controlled goods.

Approach:

This research project will investigate how access to additive and subtractive manufacturing tools by DIY communities decreases barriers for producing items on the NSG's list of technologies controlled for export. Researchers will select a subset of these items, assess specific challenges in fabricating them, and determine if new manufacturing tools embraced by DIY communities may surmount those challenges and thereby cause new proliferation risks. Findings will be summarized in a final report that will inform strategies for outreach to DIY communities, raise awareness of potential proliferation risks, and suggest countermeasures such as new export control strategies.